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Notes on American Psychodidae.

BY TREVOR KINCAID, University of Washington.

Psychoda alternata Say.

This species is evidently quite widely distributed, as specimens have been received from Pullman, in the eastern part of Washington, where they were collected by Prof. C. V. Piper, and no doubt occur elsewhere on the Pacific coast, although none have yet been taken by the writer in Western Washington.

Psychoda superba Banks.

Psychoda superba Banks. Canadian Entomologist, xxvi, p. 332 (1894).

Originally described by Mr. Banks, from Long Island, N. Y. Specimens of this species have been obtained from Battle Creek, Mich., where they were collected by Prof. J. M. Aldrich.

Psychoda cinerea Banks.

Psychoda cinerea Banks. Canadian Entomologist, xxvi, p. 331 (1894).

Psychoda pacifica Kincaid. ENTOMOLOGICAL NEWS, viii, p. 143 (1897).

An opportunity was recently afforded the writer to examine specimens of *Psychoda cinerea*, which were described by Mr. Banks, from Long Island, N. Y. In 1897 the writer described a psychodid from Washington as *Psychoda pacifica*. At the time it was recognized that the latter was closely allied to *cinerea*, and careful comparison leads to the conclusion that the differential characters are not sufficiently stable to warrant its retention as a distinct species. It is evident that we have in this case an example of a very widespread and variable species, with a range extending from the Atlantic to the Pacific, and from California to Alaska. A careful comparison of *P. cinerea* with the common European forms, *P. phalaenoides* Linné and *P. albipennis* Zetterstedt, would be of interest, as although probably not identical with either of these the relationship is evidently quite close.

Pericoma ocellaris Meigen.

Some time since Dr. Hough sent the writer specimens of a psychodid collected by him in Maine. Since it differed from the described American forms, it was at first supposed to be new to science, but it was subsequently found to agree in all except a few superficial details with the European *Pericoma ocellaris* Meigen. This latter species has several striking peculiarities, the most remarkable being certain secondary sexual characters. In the male the basal joint of the antenna is greatly elongated, forming nearly one-third the entire length of this organ, the second joint is large and globular, while the third joint bears near its apex an oval scar, from which arises a dense sinuous tuft of hair. In the female the basal joint is of more normal length and the tuft of hair is absent from the third joint.

The principal difference between the American and European forms is in the arrangement of the hair patches upon the wings and other superficial details. Hence it has been decided to distinguish the American form as follows:

Pericoma ocellaris var americana n. var.

♀. Length 2 mm.—Body brown, clothed with brown hair, except upon the dorsal arc of the thorax, which bears a dense vestiture of long white hair. Wings ovate, more than twice as long as broad, apex bluntly

rounded and terminating close beneath the end of the first simple vein; anterior bifurcation a little nearer the base of the wing than the posterior one. Vestiture of wings brown, variegated with white as follows: A large patch near the base on the anterior margin, a sinuous band crossing the wing from the end of the third longitudinal *vein* to the end of the seventh, a small patch at the tips of the second, third and fourth longitudinal veins. Fringe brown, variegated with white as follows: A large patch near the base on the anterior margin, a small patch at tips of first to third longitudinal veins, a patch on the posterior margin extending from the tip of the fourth vein to the tip of the seventh, and a small patch at the end of the ninth vein. Legs clothed with brown hair and scales, with several annulations of white upon the tarsi. Antennæ a little longer than the width of the wing, 16-jointed; basal joint cylindrical, four times as long as thick; second joint large, globular; third joint much smaller than second, ovate; fourth to sixteenth joints slender, fusiform, gradually diminishing in size; the joints clothed with scattered hairs. Ventral plate shallowly emarginate at apex, terminating on each side in a well-marked lobe; ovipositor straight, acutely pointed.

♂.—Antennæ differing from those of the female in that the basal joint is relatively much longer, forming about one-fourth the length of the entire organ; and the third joint, which is oval, bears near its apex an oval scar, from which arises a dense tuft of hair, the tuft being strongly bent in the midle, so as to assume a sinuous appearance. Genitalia conspicuous. Inferior appendages two-jointed; basal joint stout, twice as long as broad; distal joint nearly twice as long as basal, slightly curved, tapering to apex, which bears a tuft of upwardly projecting clavate setæ. Superior appendages not quite so long as inferior, two-jointed; basal joint stout, cylindrical; distal joint nearly straight, slender, about equal in length to basal, tapering to a rather acute point.

Hab.—Maine. (Dr. G. DeN. Hough).

Pericoma californica n. sp.

♀. Length 2 mm.—Body brown, clothed with long gray hair. Wings ovate, twice as long as broad, apex bluntly rounded and terminating close to the tip of the second simple vein; vestiture mottled with dark brown and white hair; patches of erect dark brown hair upon the bifurcation and at the apices of the veins; patch of white hair entad to the posterior bifurcation and another ectad to the anterior bifurcation; fringe gray; posterior bifurcation closest to base of wing, the juncture between the main vein and the lower branch of the fork obsolete; length of wing 2.5 mm. Antennæ not one-half as long as the breadth of the wing; 17-jointed; basal joint cylindrical, slightly longer than broad; second joint relatively large, globular; third to seventeenth joint nearly uniform in size, cylindrical, slightly narrowed at each end. Ventral plate squarish at base, finely ciliate, broadly and deeply emarginate at apex, the terminal lobes elongate, with bluntly rounded tips; ovipositor long and narrow, nearly straight.

♂.—Genitalia conspicuous, clothed with gray hair. Inferior appendages elongate, two-jointed; basal joint stout, twice as long as broad; second joint swollen at base, tapering to apex, which is rounded and bears on its dorsal surface a group of six or more stout flattened setæ. Superior appendages as long as inferior, two-jointed; basal joint stout, cylindrical; second joint slender, slightly enlarged basally, curving gently upwards.

Hab.—Congress Springs, California.

The above species is described from specimens reared from aquatic larvæ by Prof. Vernon L. Kellogg of Stanford University. The immature stages were described by Prof Kellogg in the ENTOMOLOGICAL NEWS for February, 1901.

EXPLANATION OF PLATE.

Figs. 1–5.—*Pericoma ocellaris var. americana*
Fig. 1.—Ventral plate of female.
" 2.—Basal joints of male antenna.
" 3.—Basal joints of female antenna.
" 4.—Male genitalia.
" 5.—Ovipositor of female.
Figs. 6–9.—*Pericoma californica.*
Fig. 6.—Wing of female, denuded of hair.
" 7.—Male genitalia.
" 8.—Ventral plate of female.
" 9.—Basal joints of male antenna.

Contributions to the Odonata of Maine.—IV.

By (the late) F. L. HARVEY, Orono, Me.

(Continued from page 178.)

67. **Enallagma geminatum** Kellicott.

Taken in Bradley at Chemo Mills, July 26, 1899, on rocks in swift water. 8 specimens taken, 7 males and 1 female. One pair *in coitu*. Our specimens are larger than recorded by Kellicott, the abdomen being about 23 mm. long instead of 20 mm. The superior appendages seems to be longer, more slender, and the superior incision deeper, than shown in Kellicott's drawing. The specimens all have lateral black stripes on 8 and 9. The male *in coitu* has a blue spot and two small blue dots in the distal third of the dorsum of 7. All the other males have 7 entirely black. One specimen showed the blue

stripe on the thorax divided. Three specimens showed no dorsal interruption of the basal ring of 2, and the black of the dorsum was a distal spot with a tail. In another specimen the interruption was a hair-line of black. The black mark on the dorsum of 8 of the female which separates the blue spot on either side is shaped like a wine glass. The blue spots on 8 are crossed by black veins. So far as we know this species has not been taken before in New England. It flies close to the water and is hard to catch. We dipped the net over the rock on which the specimens rested.

56. **Enallagma Calverti** Morse ♀.

The ♂ of this species was described by Prof. Morse in Psyche, March, 1895, p. 208. As no mention is made of the ♀ we presume that it has not been described. * Below we give a description drawn up from an examination of many specimens. There are two color forms of the female of this species: (*a*) in which the color is bright blue on the abdomen, like that in the male; (*b*) in which the markings are of the same pattern and location as in the other, but so pale that they do not show well, and the abdomen appears, when casually examined, as bronzy throughout. The bronzy form may be teneral, although both forms were in copula at the same date and at the same pond with undoubted *E. calverti* males.

Total length 29–34 mm.—Hind wing 18–21 mm. The head and thorax marked like those of the male, only paler. Abdomen bronzy-black and blue. The first segment all blue, excepting an anterior transverse dorsal stripe, back of which on the median line is a small dot, near the posterior suture on the dorsum a small T-shaped spot, the short stem reaching the suture. Second segment a dorsal dark band running the whole length, narrowing in the middle, and posteriorly widening to an orbicular spot which joins the suture of the third segment. Viewed from above, segments 3 to 8 show twin blue spots anteriorly, which slope down the sides and involve the lower half. Those on the third reach beyond the middle, while those on 4–7 involve only one-sixth. On segment 8 the blue reaches more than half the length and the separating dark color much wider. The blue on the sides of 8 separated into two spots by a narrow projection of the dark color. Dorsum of 9 dark. Dorsum of 10 with narrow portion of blue of the sides showing each side.

* [A brief description of the female was published by Mr. E. B. Williamson in the NEWS for May, 1900, page 455.]

68. **Enallagma exsulans** Hagen.

Abundant early in July along the Stillwater River at Orono (Harvey). This was taken, in 1891, at Manchester, by Miss Wadsworth, and is evidently common in the Penobscot valley, although we have previously overlooked it.

Subfamily 3, GOMPHINÆ.

26. **Hagenius brevistylus** Selys.

This species is quite common in Chemo Stream, Bradley, in July. We have taken about 40 specimens during the past two seasons, and they were nearly all males. They were flying up stream mostly, and nearly all were taken from a dead limb about four feet above and projecting over the water. They are not very wary, and one can readily wade up to them. Of those taken, one male showed a peculiar malformation of the left fore wing in which the cross vein of the triangle is horizontal and the cell in front of it curved; seven single cells on the distal side represent the double row in normal specimens; the double row of border cells below the triangle and the row of single cells at the anal angle are reversed. We took a single ♀ ovipositing in shallow, running water, Russell Stream, Northeast Carry, Aug. 29, 1899, and Aug. 28th a single old ♂ with tattered wings on a rock in the West Branch of the Penobscot, Northeast Carry. These are late dates for this species.

(To be continued.)

A Trip to Montreal.

BY H. H. NEWCOMB.

It was my good fortune to spend a couple of days in Montreal during the early part of last October. Previous to my coming I had writen to several of the Lepidopterists of that beautiful city, and the cordiality of their replies filled me with eager anticipation; nor was I disappointed, for a more courteous and entertaing lot of collectors would be hard to find.

Soon after my arrival I was met by Mr. Albert F. Winn, the President of the Montreal Branch of the Entomological Society of Ontario, and by him advised how best to spend my time in order to see as many of the collections of Lepidoptera as possible during my short stay.

Bright and early the next morning I started for the Natural History Rooms on University Street. The collection there was not what it should be, I am sorry to say, being in poor condition and small in numbers; but, alas, how often we find the same state of affairs here in the States, where the Directors of Museums neglect Entomology for less important collections. As Mr. Alfred Griffin, the curator, is a very agreeable gentleman to meet, I felt repaid for my visit in spite of my disappointment at not seeing more "material."

McGill University is beautifully situated under the shadow of Mt. Royal. In the Redpath Museum, one of the handsome college buildings, are no less than four collections.

The D'Urban collection is in fair condition, considering its age, and consists entirely of North American material, and is contained in 9 drawers.

The Pearson collection fills 28 drawers. The insects are well spread, but are a mixed lot of Lepidoptera, though the greater part are North American.

The Bowles' collection is well arranged, and is kept in 39 cases with glass tops. As in the preceeding, North American Lepidoptera predominate. The Catocalæ are well represented, and among the varieties I noticed *Lepisesia flavofasciata* and *Hepialus thule*. The latter moth is strictly local and "flies between 8.10 and 8.25 on the evenings of July 11th, 12th and 13th," so I was informed by one of the enthusiasts.

Fourth and last is the Denton collection, which consists of 500 exotics, beautifully mounted in the Denton tablets. This makes a very handsome appearance, and is a great addition to the Museum.

By kindness of Mr. Winn, I next saw the collection of Mr. H. H. Lyman, who was in Europe at the time of my visit. This was indeed a magnificent collection of North American material. It was particularly rich in the genera *Argynnis* and *Chionobas*, and showed great care in mounting, labeling, etc. It occupies about 60 drawers.

The Montreal Branch held their monthly meeting one week earlier than the regular date, so that I might be present, a compliment which I very much appreciated. Before the meeting, which was held at Mr. Winn's residence, I had a hasty

view of his collection, which is an excellent one and in fine condition. The classification, mounting, labeling, etc., are first class, and it is, indeed, a pleasure to see such a well-cared for collection. It contained many rarities which space forbids me to enumerate. I must mention, however, a fine line of *H. thule*, of which I was fortunate enough to have one presented to me along with other "plunder" of hardly less importance. Mr. Winn's collection occupies about 50 drawers and represents North American fauna.

The meeting proved very interesting, there being nine members present, one of them my good friend, Dr. Fyles of Quebec, who made a special trip from that city in order to attend. Several papers were read and a good exhibit of specimens made. A collation followed, which added to the sociality of the affair.

The only other collection which I had time to see was that of Mr. Dwight Brainerd and his brother. Though not so large as some of the others, this collection is well worth seeing, as it is unique in many respects. It contains no exchanges; every specimen was taken by the owners. It is strictly local, with the exception of some material from Edgartown, Mass., where the Messrs. Brainerd have spent some of their vacations. The classification is the reverse of what we usually see; the lowest forms coming first in order and the last drawers of the cabinet containing the diurnals. With the specimens are a great many blown larvæ, bleached wings, ovæ and even frass, so that a high scientific value is attained, and the life histories of many insects seen at a glance.

It was with great regret that my two days were over—all too soon—but I shall always cherish pleasant memories of my visit to Montreal, and remember with pleasure the kindness of the members of the Montreal branch.

A Successful Failure.

By Annie Trumbull Slosson.

I went again last winter to Miami, on Biscayne Bay, Florida, staying there from Christmas-eve till the first of April. I have never known as unfavorable a season for collecting in

that part of the country. There was no severe cold, no freezing weather such as sometimes visits that semi-tropical clime, described in hotel circulars and land companies' advertisements as "beyond the frost line." But we had day after day of chilly, cloudy weather, generally with high winds. Our evenings were shivery, and our nights so cold that one found an extra blanket comfortable. Now, Florida insects are very susceptible to changes in temperature; much more than are our hardy northern ones. In Franconia I have often taken Lepidoptera when the mercury was below 50°. In South Florida it is an exceptionally bold insect that ventures out when the temperature is lower than 65°. So I found all orders of insects very scarce. Even the proverbially unseeing pleasure tourist noticed and commented upon the absence of butterflies. And as for the few entomologists who came that way —well, I know that one at least, a man well known to all readers of the NEWS, a good collector and charming companion, used some very strong language in speaking of the scarcity of insect life at Miami this season. I think he said —or berhaps only implied—that he could capture more insects in Philadelphia during the winter than in the tropical country along Biscayne Bay. Well, I could hardly blame him. Day after day, week after week went by, and the dearth of insect life continued, while my spirits sank lower and lower and hope grew faint; and at the end of March, as I prepared to turn northward, I still considered the season a failure—entomologically, I mean. But now, that lovely white Miami, with her waving palms and blue waters, is far away, distance lends her usual enchantment, and I recall only the pleasant experiences, the interesting, if few, discoveries, which now seem to make my winter very near to a success, after all.

The most common shrub along the roadsides at Miami, near the shore and also far inland, is one of the Ulmaceæ, *Trema micrantha*. This grows from ten to twenty feet high, looks not unlike the Celtis or Hackberry, and has nettle-like leaves similar to those of Bœhmeria, insignificant, greenish flowers and very small, round, yellow fruit. In Chapman's Botany the only locality given for this shrub is "shell mounds in

Lastero Bay, South Florida." But, as I have said, it grows everywhere along Biscayne Bay. And, for some reason unknown to me, it is the favorite food plant and haunt of insects in all orders. Several years ago I found two fine *Halisodota* caterpillars feeding upon this shrub. They proved to be larvæ of *H. cinctipes*. I have never found any of these since that time until this last winter. The very first walk I took after my arrival—it was on Christmas-day—I found several of these handsome caterpillars in different stages, and they were to be seen occasionally from that time until February, and perhaps later. They fed well in confinement, spun the usual egg-shaped cocoons and emerged, between three and four weeks after pupation, perfect moths, closely resembling our northern *H. tesselata*. I have never seen these larvæ on any plant but the *Trema*. There were always, too, upon this shrub two tiny Jassids, *Typhlocybas* I think, brightly and daintily marked; and one day, as I swept my net over one of the bushes, a delicate green Capsid flew and lighted upon my sleeve. It was the most shadowy, fragile ghost of a Capsid, transparent and almost invisible as it rested on the pale green underside of the leaves, where I afterwards saw it. I took several of them. Prof. Uhler has given it the MS. name *Diaphania parvula*. One day, while hunting for this small creature, I came upon a colony of aphids. Among them and feeding upon them was what I felt sure was a Lycænid larva. It was of usual slug-like form, with small head. My excitement was intense. I took the leaf with the aphids and their devourer, placed them in a glass tumbler in my room and at once wrote to Dr. Skinner. Was *Feniseca tarquinius* found in South Florida, or did he know of any other insectivorous butterfly larva in this country? So I questioned him. Of course, our enthusiastic Aurelian was interested. He responded at once, urging me to spare no pains in bringing the larva to maturity and expressing hopes that I might find more specimens. Before the letter reached me I had discovered another colony of plant lice with a similar larva in its midst, and both my specimens had formed chrysalids—or what seemed to me such—odd little cases, light brown in color, which I did not examine very

closely. Long before I looked for transformation, the cases opened and there emerged—two flies! My curious Lycænid larvæ were only maggots of the dipterous genus *Baccha*, long known as aphidivorous. Do you wonder that I set this blunder down as one of my successes? Well, it was a discovery, of its kind. I learned a lesson, too, from the experience; and is not a lesson, if thoroughly learned, a sort of success?

But I found the genuine thing a little later—a real Lycænid caterpillar, though it was not feeding upon Aphidæ. It was a green, slug-like larva, looking silvery or frosted, because of the white, short bristles, which grew close together all over it. It was feeding on the leaves of the *Trema*, and continued to feed and thrive in captivity until it came to the imago state and became a fine male specimen of *Thecla martialis* Herr Sch. This is a West Indian species, which I was so fortunate as to add to our own lists a few years ago. As far as I know, its life history has never been recorded.

(To be continued.)

Letters from Thomas Say to John F. Melsheimer, 1816–1825.—V.

Philadelphia Nov^r 6^th^ 1817.

Dear Sir

I sincerely thank you for the insects you sent me, I received them in the best possible order, & many of them were new to me, you are rich in the very interesting aquatic genera —For all these I will endeavour to make you some return by & by. In the mean time I would send you the first number of the *American Entomology*[1] if I could find any conveyance for it; sending it through the Post-office will be unnecessarly expensive, perhaps you can advise a better mode—It contains six coll^d plaates, besides an engraved title page & vignette, with about two sheets of letter press; the arrangement of the matter is upon the plan of *Donovan's Brittish Insects* I will have

[1] The generally ascribed dates of publication of the *American Entomology* is 1824–'28. The work appeared in numbers, and, as is seen, the first appeared in 1817. In the preceding letter, dated April 27, 1817, Say speaks of the first number as not having been issued; inferentially it appeared between that date and that of the present letter.—W. J. F.

the pleasure to send you the numbers as they appear—The descriptions you will find are very brief, perhaps too much so, although accompanied by figures—I shall alter the plan somewhat for the future numbers—Great obscurity has crept into Natural History in consequence of a mistaken notion, that the character of an animal can be given in three or four words; you, no doubt, have had occasion to regret the brevity of description that has been indulged in by Linne, Fabricius &c, & will agree with me, that in many instances they are more generic than specific, so that several distinct species can with equal propriety be referred to a single trivial name; but naturalists are now beginning to profit by their own experience of the absurdity of this mode of procedure & I hope it will not be long, before in our text books we shall have such characters indicated, as shall be decisive——

Isoceros brunneus has been called by Latreille *Parandra brunea* & also *Parandra lævis*, has not De Geer in some part of his works named it *Attelabus laevus?* this syonym I have seen somewhere. It appears to have five joints to the tarsi, the addition [al] one is penultimate, & it is also worthy of remark that in *Cucujus* there is an appearance of a fifth joint at the base of the tarsus; in habit the two genera are widely distinct—will it not serve to connect the preceding family with this, in the same degree nearly, that *Uleiota* (*Brontes*) connects this family, with the *Cerambicini*.

It is with the greatest pleasure I learn your intention to communicate to me some observations on some of the genera of Insects, this I assure you will afford me the utmost satisfaction & I look for them with solicitude; I have made considerable advances in a distinct work which may be entitled *Descriptions of the Insects of North America*,[2] this is to be without plates, it is a work I have fixed particular attention upon, but it will occupy a considerable time & will be the product of much, & unremitted, labor.

Any observations you may make to me, with which I was not previously conversant, shall be most scrupulously recorded & placed in that work to your credit, & all those insects you have sent me, which I had not before seen, will of course be

[2] See footnote 1, page 176 of this volume.

noted there as yours—& your specific names as recorded in the "*Catalogue of Insects of Pennsylvania*" shall be preserved in every instance that your numbers (which I have always retained attached to the Insects you sent me) in my Cabinet, will enable me so to do, with the exception only of such names, as have been applied to other insects of the same genus—

I thank you much for the handsome manner, in which you have been pleased to express your approbation, of my attempt at descriptions of our Fresh Water & Land Shells, I was urged to do it by finding them entirely overlooked in the publications of late authors; Several shells have been since added to the list, which I will communicate to you in the "*Journal of the Academy of Natural Science*" a small work we are issuing here, from the Society that I informed you of, when I had the pleasure to be at your house. This little work I will be careful in future to send to you as early as it appears, though I do not know how long it may continue to be issued; you will see in the "Journal" that I have been describing the Crustacea of our waters; but my dear sir, I assure you that Shells and Crustacea are but secondary things with me, INSECTS are the great objects, of my attention, I hope to be able to renounce everything else & attend to them only—

I sent for some of the books you informed me of, to Paris, & have recieved intelligence from my correspondent there of their having been shipped, so that they may be expected every day.

I have made out a monograph of the *Cicindela* of N. America which will soon be published with figures, it shall be sent to you as soon as it appears, There are twelve species described. I would give you here a further account of it but my paper warns me to stop—

Most respectfully I remain your friend
& Obd^{t} Serv^{t}
Thomas Say.

I yesterday sent you a copy, through the Post-office, of the fifth number of the *Journal of the Academy of Natural Sciences*—Tomorrow I will send the Sixth number—I hope they may be duly received

T Say

A New Chionobas from Maine.

By H. H. Newcomb.

Chionobas katahdin n. sp.

Male. Size and general character of *semidea*, but with the outer third of wings much lighter in color. Primaries with one to four small spots parallel to the outer margin. Edge of costa and fringes concolorous. Undersides of inferiors have a wide band, much as in *taygete*. The female has the same general character as the male, but on the inferiors below there is a row of five spots. Described from a number of specimens taken by the writer on Mount Katahdin. A detailed description and account of the species will appear inthe October News.

A New Anthomyid Injurious to Lupines.

By D. W. Coquillett.

Phorbia lupini n. sp

♂.—Black, the halteres yellow, frontal vitta reddish brown, middle and hind tibiæ largely yellowish brown; eyes contiguous, about eight pairs of frontal bristles, antennæ very broad, noticably shorter than the face, the third joint only slightly longer than the second, pubescence of the arista very short, proboscis short and rather robust; thorax thinly brownish pruinose, the posterior portion gray, pruinose and marked with a dark median vitta, the sides and pleura densely light gray pruinose; scutellum brownish pruinose, margined with light grey; abdomen narrow, nearly linear, its five segments of nearly an equal length, dark gray pruinose and marked with an indefinite, blackish median vitta, the venter not furnished with processes, its hairs rather long and of nearly an equal length, hypopygium rather large, its first segment densely grey pruinose, the second polished, bearing many rather long hairs; front tibiæ each bearing a bristle near the middle of the posterior side, a blunt pointed one at the apex on the posterior side besides a few normal bristles elsewhere at the apex; middle femora ciliate, with long bristles on the basal half of the posterior under side, and with very short ones on the apical half; middle tibiæ each bearing a bristle near two-thirds the length of the anterior outer side, one slightly higher on the posterior outer side, one near the middle and another near three-fourths the length of the inner side; hind femora ciliate almost the entire length of their under side, with long bristles of nearly an equal length; hind tibiæ ciliate, with about seventeen almost straight, rather long bristles on nearly the entire length of the posterior inner side, with from four to six on the anterior inner side, from five to seven on the anterior outer side, and the same number on the posterior outer side, besides

those at the apex; tarsi not furnished with bristly hairs on the upper side of the first joint; wings hyaline, costal spine shorter than the small cross-vein, third and fourth veins converging toward their apices, penultimate section of the fourth about three-fourths as long as the last section.

♀.—A pair of præocellar bristles, thorax densely yellowish gray pruinose and marked with three indistinct black vittæ, abdomen oval, the first segment shorter than the remaining four, front tibiæ each bearing an additional bristle, situated below the middle of the anterior side, no blunt pointed bristle at the apex (middle legs wanting), hind tibiæ bare on the posterior inner side, bearing two bristles on the median third of the anterior inner side, four on the posterior outer side and five on the anterior outer side, otherwise as in the male, except the sexual characters.

Length 5 mm.

Two males and one female, bred February 20, 1901, by Mr. Carroll Fowler, from stems of *Lupinus albus*, received from Los Angeles, Cal. Type No. 5746, U. S. Nat. Mus.

Near *platura* Meigen (= *fusciceps* Zett., = *ciliciura* Rond.), but readily distinguished by the long bristles on the under side of the hind femora.

A New Species of Dichopetala.

By James A. G. Rehn.

The specimen here described as a new species was recently referred by the writer to *D. mexicana* Brunner, but a more recent examination has convinced him that its affinities are closer to *D. emarginata* Brunner, but still well removed from that.

Dichopetala pulchra n. sp.

1900. *Dichopetala mexicana* Rehn (not of Brunner), Trans. Amer. Ent. Soc., xxvii, p. 88.

Type: female; Rio Cocula, Guerrero, Mexico, May 12, 1898. Collected by Otis W. Barrett.

Allied to *D. emarginata* Brunner, with which species it agrees in the form of the subgenital plate, but differing mainly in the color pattern which approaches *D. mexicana*.

Size medium. Head subglobose; the vertex produced into a spine-like process, which is separated from the front by a narrow diastema; front, clypeus and labrium glabrous; eyes small, globose. Pronotum centrally constricted; the anterior margin slightly arcuate, the posterior truncate;

central sulcus deeply impressed on the upper portion of the lateral lobes which are much longer than deep, the lower margin sinuate, the anterior and posterior angles broadly rounded. Tegmina very abbreviate, just appearing from under the pronotum. Abdomen very heavy and corpulent. Limbs very slender; posterior femora and tibiæ very long, the spines on the external margin of the latter numbering 29. Ovipositor rather stout, the superior and inferior margins serrato-dentate, the former for about one-third and the latter about one-fourth of the total length. Subgenital plate with a moderately deep triangular incision. General color above brownish purple, extending from the tip of the vertex to the last segment of the abdomen; the sides of head, pronotum and abdomen and lower surface pale yellowish green. Front, clypeus and labrum whitish. Pronotum with the general tint of the disk bordered by a broken black line, which is continued more or less distinctly upon the abdominal segments, this being outlined externally by a line of pea green. Limbs greenish tinged with reddish on the anterior and median femora, the distal extremities of the femora and both the distal and proximal extremities of the tibiæ black, the posterior femora being basally variegated with black on the outer face. Ovipositor green, the superior margin and tip somewhat infuscate.

Measurements.

Total length	20. mm.
Length of pronotum	4.5 mm.
Length of ovipositor	11.5 mm.
Length of ant. femora	11. mm.
Length of post. femora	24.5 mm.
Length of post. tibiæ	29. mm.

A Peculiar New Type of Halictine Bees.

By T. D. A. Cockerell.

Halictus conanthi, sp. n.—♀. Length about 4 mm.; black, with a decided green lustre on head, thorax and abdomen, or it might better be described as very dark green, the surface throughout having a sort of satiny sheen; *head elongate-oval, shaped much as in the Proctrotrypia genus Dissomphalus* (♀), *with the short antennæ placed very low down, at least twice as far from the ocelli as from the mouth;* clypeus prominent, piceous, shining; a fringe of shining, yellowish hairs beneath its margin; mandibles whitish, with ferruginous ends; maxillary palpi long and slender; flagellum pale ferruginous beneath, somewhat darker above; tegulæ hyaline, not punctured; wings very short, clear, beautifully iridescent, nervures and stigma sepia-brown; *first recurrent nervure received by second submarginal cell not much beyond its middle;* femora black, knees, tibia and tarsi light ferruginous; abdomen long and narrow, but

flattened, with a conspicuous apical bunch of fuscous hairs. With a compound microscope, the abdomen is seen to be minutely transversely striate; the head and thorax are tessellate; the front is distinctly, but very sparsely punctured; the cheeks, legs, etc., are covered with plumose white hairs.

Hab.—Mesilla, New Mexico, July 17 (*Ckll.*) One at flowers of *Conanthus hispidus;* it may be that the narrow head serves to facilitate the getting of nectar from the flower, but it is extremely peculiar. The insect may be referred to a new subgenus *Conanthalictus*, characterized by the peculiarities italicised in the above description, and also by the large semilunar enclosure of the metathorax, coarsely granular and dull, with a distinct rim.

Sphæridium scarabæoides Linn. in Northern and Central New York.—I was interested in Mr. Pearsall's note in the May NEWS regarding the occurrence of this species in the Catskills. In the NEWS for September, '98, I recorded its occurrence in St. Lawrence County in the vicinity of Potsdam, the first specimens having been taken in the summer of '96. The species is evidently well established there, as I have taken numbers of the beetles each succeeding season.

On May 4th last, while passing through a cow pasture just outside of Ithaca, I made a short search for *Sphæridium*, and in the course of a few minutes located several—enough to satisfy me that the species is well established in this locality.

Like *Aphodius fimetarius* Linn., with which I find it associated to a considerable extent, this species may have been introduced from Europe into the eastern part of the United States or Canada, from which point it is now spreading.

It would be interesting to know how far west and south the species is found. It is a strong flier, so its range could be rapidly extended were the conditions favorable.—C. O. HOUGHTON, Ithaca, N. Y.

EGGS OF *Arachnis zuni*.—On the 27th of May a large female moth (*A. zuni*) was taken at Las Vegas, N. M., and confined in a pasteboard box. Four days after about two dozen eggs were discovered firmly glued to the side of the box.

The eggs are nearly globular, slightly pointed at the micropyle. They are about ½ mm. in diameter, and of a light bluish gray. The surface appears smooth and shiny when examined with an ordinary lens, but is found to be irregularly roughened when examined with a compound microscope.—WILMATTE PORTER COCKERELL.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

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PHILADELPHIA, PA., SEPTEMBER, 1901.

The fact that several serious and often fatal diseases are disseminated by insects has called general attention to Entomology as a scientific study. The entomologist of not many years ago was looked upon by the public as a sort of harmless lunatic. At the present time Entomology is one of the most important studies known. We venture the opinion that in case of war between two nations, fairly evenly matched as to men and money, that the nation recognizing the importance of entomology and bacteriology and giving proper attention to these matters would come out victorious. In other words, it would not be a question of armament.

The English, in their present war with the little African Republics, have had over 100,000 men invalided. The cause was undoubtedly flies and the *Bacillus typhosus*. In our war with Spain we lost 8000 men by disease. What is the lesson? Do away with political appointments and nepotism. Don't depend on curing the disease (therapeutics). Here is a recipe for death: Several commanding officers of a regiment that know as much about camp sanitation and hygiene as the horses they ride. Several doctors—political appointees—with the ink scarcely dry on their diplomas; uncovered latrines; no policing of the camp; excrement everywhere; calvary near by; house-flies by the million; deaths from typhoid fever by the thousand. Has the lesson been learned even now?

Entomological Literature.

COMPILED BY P. P. CALVERT.

Under the above head it is intended to mention papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, relating to American or exotic species, will be recorded. The numbers in HEAVY-FACED TYPE refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in brackets.

1. Proceedings of the Academy of Natural Sciences of Philadelphia, 1901, part i, May.—**3.** The American Naturalist, Boston, '01.—**4.** The Canadian Entomologist, London, Ont., '01.—**5.** Psyche, Cambridge, Mass., '01.—**6.** Journal of the New York Entomological Society, June, '01.—**7.** U. S. Department of Agriculture, Washington; publications of. —**9.** The Entomologist, London, '01.—**11.** The Annals and Magazine of Natural History, London, June, '01.—**14.** Proceedings of the Zoological Society of London, '00; iv, April 1, '01.—**21.** The Entomologist's Record, London, '01.—**33.** Denkschriften d. Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, lxviii, Vienna, '00, rec'd. June 10, '01.—**35.** Annales, Société Entomologique de Belgique, xlv, 5, Brussels, May 29, '01.—**37.** Le Naturaliste Canadien, Chicoutimi, Quebec, June, '01.—**40.** Societas Entomologica, Zürich-Hottingen, '01.—**60.** Comunicaciones, Museo Nacinal de Buenos Aires, i, 8, March 18, '01.—**64.** Annalen, k. k. Naturhistorischen Hofmuseums, xv, 2, Vienna, '00; rec'd. June 10, '01.—**74.** Naturwissenhschaftliche Wochenschrift, Berlin, May 26, '01.—**81.** Biologisches Centralblatt, Erlangen, '01.—**103.** Proceedings, California Academy of Sciences, Zoology, iii, San Francisco, '01.—**108.** The Agricultural Journal, Cape Town, '01.—**150.** Bulletins, New Hampshire Agric. Exper. Station, Durham, N. H., '01.—**151.** Atti, R. Accademia di Scienze Fisiche e Matematiche (2) x, Naples, '01.

THE GENERAL SUBJECT.—Annandale, N. Observations on the habits and natural surroundings of insects made during the Skeat Expedition to the Malay Peninsula 1899-1900. [Flower-like Mantidæ, Harpagid pupa, alarming color and attitude, sounds produced by insects, luminosity, use of spines, use of prolongation of head in Fulgoridæ].—**14. Balint, S.** Intracellular arrangement of neurofibrillæ in facetted eyes of insects, Sitzungsberichte d. medicinisch-naturwiss. Section, Siebenburgischen Museumvereins, xxiv, Kolozsvart, 1899. Rec'd. Jun. 1, '01. —**Brunetti, E.** On labeling insects, **9,** June, **4,** July.—**Chapman, T. A.** Names and definitions of hybrids, **9,** July.—**Issel, R.** Essay on the Italian thermal fauna, Atti, R. Accademia di Scienze di Torino,

xxxvi, 1901.—**Langley, S. P.,** and **Very, F. W.** On the cheapest form of light [fire-fly], 3 pls., Smithsonian Miscellaneous Collections 1258, Washington, '01.—**de Meijere, J. C. H.** On the last joint of the legs of Arthropods, 8 pls., Zoologische Jahrbücher, Abth. fur Anatomie, xiv, 3, Jena, April 24, '01.—**Möller, A.** Phycomyceten und Ascomyceten. Untersuchungen aus Brasilien. Jena. Fischer. 1901. [Cordyceps, etc. on insects].—**Osten Sacken, C. R.** An introduction to the record of my life work in entomology. Cambridge: Printed at the University Press. 1901.—**Plateau, F.** New researches on the relations between insects and flowers: Do Syrphids admire the colors of flowers? Memoires, Société Zoologique de France, xiii, Paris, 1900.—**Rudow.** Birds and Insects, Insekten Börse, Leipsic, June 6, 13, '01.—**Walton, L. B.** The metathoracic pterygoda of the Hexapoda and their relation to the wings, figs., **3,** May.—**Weeks, A. C.** Suggestions for collecting insects with least injury [in Proceedings of the New York Ent. Society], **6.**

ECONOMIC ENTOMOLOGY.—Anon. Catalogue of Collections of pests and insecticides. Commission of Agricultural Parasitology of the Secretary for Public Promotion. Mexico. 1901.—**Chittenden, F. H.** Insect enemies of the white pine, figs., Bulletin 22, Division of Forestry, **7,** 1899; Rec'd. June 10, 1901.—**Colledge, W. R.** Notes on a malaria-carrying mosquito (*Anopheles pictus*), 4 pls., Proceedings, Royal Society of Queensland, xvi, Brisbane, '01.—**Frers, C.** Locust extermination [in the Argentine Republic], **108,** May 23.—**Koningsberger, J.,** and **Zimmermann, A.** The animal enemies of coffee culture in Java, ii [in Dutch]. Mededeelingen uit s'Lands Plantentuin, xliv. Batavia, 1901.—**Künckel d'Herculais, J.** Locust extermination [translation from the Spanish of a report to the Argentine Government], **108,** May 9.—**Kuwana, S. I.** The San José scale in Japan, Contributions to Biology from the Hopkins Seaside Laboratory of Leland Stanford, Jr., University, xxv, Palo Alto, Cali., '01.—**Lowe, V. H., and Parrott, P. J.** San José scale investigations, Bulletins 193, 194, New York Agric. Exper. Station, Geneva, N. Y., Dec., '00.—**Mally, F. W.** The Mexican cotton-boll weevil, figs., Farmers' Bulletin, No. 130, **7,** '01.—**Malmejac, F.** Destruction of ants, La Nature, Paris, June 15, '01.—**Manrique, J. G.** Extinction of the locust, possibility of the propagation of fungus epidemic, **108,** May 23, June 6.—**di Mattei, E.** Malarial prophylaxis with protection of man against mosquitoes, Atti, Accademia Gioenia di Scienze Naturali in Catania (5) xiii, 1900. Rec'd. June 10, '01. —**Nuttall, G. H. F.** On the question of priority with regard to certain discoveries upon the etiology of malarial diseases, Quarterly Journal of Microscopical Science, London, May, '01.—**Rogers, L.** The relationship of the water-supply, water-logging, and the distribution of Anopheles mosquitoes respectively, to the prevalence of malaria north of Calcutta, Journal, Asiatic Society of Bengal, lxix, ii, 4. Calcutta, Jan. 22, '01. Rec'd. June 14.—**Sasaki, C.** On the Japanese species allied to the San José scale in America, 1 pl., Annotationes Zoologicæ Japonenses, iii, 4.

Tokyo, April 30, '01.—**Slingerland, M. V.** A glance into the past and future, and some of the insect episodes of 1900, figs. Reprint from Proceedings of the Forty-sixth Annual Meeting of the Western New York Horticultural Society, Jan. 23 and 24, 1901, Rochester, 1901; three unusual strawberry pests, figs., Bulletin 190, Cornell University Agric. Exper. Station, Ithaca, New York, May, '01; further experiments against the peach-tree borer, figs. Bulletin 192 of the same, June.—**Sternberg, G. M.** The transmission of yellow fever by mosquitoes, Popular Science Monthly, New York, July, '01.—**Tryon, H.** Pineapple mealy bug [in Queensland], **103,** April 25.—**Weber, L.** Insects as parasites, producers and distributors of disease in man and higher animals, Abhandlungen u. Bericht xlv, Verein für Naturkunde zu Kassel, 1900.—**Webster, F. M.** An experiment in the importation of beneficial insects, **4,** June.—**Weed, C. M.** Insect record for 1900, **150,** Bulletin 81, Feb.—**Wilcox, E. V.** Abstracts of recent papers, Experiment Station Record, xii, 10, **7,** '01.—**Wolff, M.** The habits of the intermediate host of malaria according to the observations of Grassi, figs., **81,** May 1.—**Xambeu.** Habits and metamorphoses of *Anobium paniceum L.* Le Naturaliste, Paris, June 1, '01.

ARACHNIDA.—Nalepa, A. To knowledge of the genus *Eriophyses*, Sieb. em. Nal., 5 pls., **33.—Police, G.** Researches on the nervous system of *Euscorpius italicus*, 1 pl., **151.—Rainbow, W. J.** Notes on the architecture, nesting habits and life histories of Australian Araneidæ, etc. Records of the Australian Museum, iv, 1, Sydney, Mar. 29, '01.

MYRIOPODA.—Attems, C. Classification of the Polydesmidæ, ii, 6 pls.,* **33.—Mauck, A. V.** On the swarming and variation in a myriapod (*Fontaria virginiensis*), **3,** June.

COLLEMBOLA.—Folsom, J. W. Review of the Collembolan genus *Neelus* and description of *N. minutus* n. sp.* 1 pl., **5,** July.

ORTHOPTERA.—Bordas, L. The defensive or odoriferous glands of roaches, Comptes Rendus, l'Academie des Sciences, Paris, June 3, '01.—**Morse, A. P.** The Xiphidiini of the Pacific coast,*, **4,** July.—**Pierantoni, U.** Contributions to the study of the stomatogastric nervous system of saltatory Orthoptera, 1 pl., **151.—Rehn, J. A. G.** The Linnean genus *Gryllus*—additions and corrections, **4,** June.

NEUROPTERA.—Higgins, H. T. The development and comparative structures of the gizzard in the Odonata zygoptera, 3 pls., **1.—McClendon, J. F.** A new species of *Chrysopa* from Texas, fig., **5,** June.—**Sondheim, M.** Perceptive ability of a dragonfly larva, **81,** May 15.

HEMIPTERA.—Berg, C. Substitution of a generic name of Hemiptera, **60.—Breddin, G.** New Coreidæ and Pyrrhacoridæ, **40,** May 15; new neotropical bugs, **40,** June 15.—**Cholodkovsky, N.** Aphidological communications, figs., Zoologischer Anzeiger, Leipsic, May 13, '01.—**Cockerell, T. D. A.** New Coccidæ from Mexico,* **4,**

July; a new Coccid on roots of *Rubus*,* **5,** June; a new *Ceroplastes* (fam. Coccidæ), **60.—Coleman, G. A.** The redwood mealy bug (*Dactylopius sequoiæ*, sp. n.),* 1 pl., **103,** May 29, '01.—**Distant, W. L.** Rhynchotal notes, x. Heteroptera, fam. Lygæidæ, **11;** revision of the Rhynchota belonging to the family Pentatomidæ in the Hope Collection at Oxford, 2 pls., **14.—Handlirsch, A.** To knowledge of the stridulatory organs of the Rhynchota, figs., 1 pl., **64.—Hempel, S.** Descriptions of Brazilian Coccidæ, **11.—King, G. B.** The Coccidæ of British North America, **4,** June, July.—**Kirkaldy, G. W.** On the nomenclature of the genera of the Rhynchota, Heteroptera auchenorrhynchous Homoptera, **9,** June.—**Kuwana, S. I.** New and little known California Coccidæ,* 2 pls., **103,** May 28, '01.—**Montgomery, T. H., Jr.** Further studies on the chromosomes of the Hemiptera Heteroptera, 1 pl., **1.—Osborn, H.** —New genus including two new species of Saldidæ,* **4,** June.—**Patterson, R. W.** Notes on *Cerococcus*, 3 pls., **103,** May 24, '01.—**Sundwick, E. E.** On Psylla wax, psyllostearyl-alcohol and psyllostearyl acid (psylla-alcohol, psylla-acid), iii, Hoppe-Seyler's Zeitschrift für Physiologische Chemie, xxxii, 3, 4. 6 Strassburg, April 27, '01.—**Woodworth, C. W.** Note on the respiration of *Aleurodes citri*, **4,** June.

COLEOPTERA.—Beaulieu, G. The Scarbæidæ of the province of Quebec (cont.), **37.—Berg, C.** Some new or known Argentine species of the genus *Epipedonota* Sol., **60.—Brauns, H.** A new termitophilous Aphodide from Orange Free State, 1 pl., **64.—Fauvel, A.** Description of a new species of Staphylinid from Tierra Fuego, **60.—Kerremans, C.** Considerations on the Buprestidæ [Phylogeny, Mimicry, etc.], **35.—Waterhouse, C. O.** Two new genera of Coleoptera belonging to the Cupesidæ and Prionidæ, **11.—Webster, F. M.** Insectary rearings of two species of *Mordellistena*, **4,** June.

DIPTERA.—Barford, H. The development of bot-flies according to the latest researches, **74.—Brues, C. T.** Two new myrmecophilous genera of aberrant Phoridæ from Texas,* figs., **3,** May.—**Chagnon, G.** Preliminary studies on the Syrphidæ of the province of Quebec (cont.), **37.—Kellogg, V. L.** Phagocytosis in the postembryonic development of the Diptera, figs., **3,** May; studies for students, i. The anatomy of the larva of the giant crane-fly (*Holorusia rubiginosa*), figs., **5,** June.—**Kulagin, N.** The structure of the female sexual organs in *Culex* and *Anopheles*, 1 pl. Zeitschrift für wissenschaftliche Zoologie, lxix, 4, Leipsic, May 28, '01.—**Melander, A. L.** Gynandro-morphism in a new species of *Hilara*,* figs., **5,** June.

LEPIDOPTERA.—Anon. The [John Henry] Leech Collection [of Lepidoptera] presented to the nation [British Museum], **9,** June.—**Beutenmüller, W.** The earlier stages of *Sphinx gordius, Ceratonia amyntor, and Smerinthus geminatus* (3 papers), **6;** descriptions of three Lepidopterous larvæ, **6.—Buckler, W.** (the late). The larvæ of the British Butterflies and Moths, vol. ix. Edited by G. T. Porritt. London.

Ray Society volume for 1899. 1901. 17 colored pls.—**Caspari II, W.** Some remarks on the theme 'Persecution of butterflies by birds,' **40,** June 1.—**Coquillett, D. W.** Descrptions of three Lepidopterous larvæ, **6.**—**Dognin, P.** New Heterocera from South America, **35.**—**Dyar, H. G.** Further about the type of *Acronycta*, **4,** July; life histories of North American Geometridæ, xxiii, **5,** July; note on the larva of *Psaphidia thaxterianus*, **6;** Diagnosis of a new Arctian,* **6.**—**Fernald, C. H.** New Pyralidæ and Tortricidæ from Palm Beach, Florida,* **6.**—**Fiske, W. F.** An annotated catalogue of the Butterflies of New Hampshire, **150,** Technical Bulletin No. 1.—**French, G. H.** More about the red-winged Catocalæ, **4,** July.—**Frings, C.** Temperature experiments in the year 1900, **40,** May 15 to June 1.—**Grinnell, F., Jr.** A new variety of *Lycæna amyntula*, with other notes,* **4,** July.—**Grote, A. R.** Some original descriptions by Guenée, **4,** June.—**Hinds, W. E.** Notes on the life-history of *Alsophila pometaria* Peck. (Fall Canker-worm), 1 pl., figs., **4,** July.—**König, A.** Butterfly-caterpillars in water, Mittheilungen der Section für Naturkunde, Oesterreichischen Touristen-Club, xii, Vienna, 1900.—**Prideaux, R. M.** Some notes on sexual dimorphism observed in the scaling of *Colias edusa*, 1 pl., **21,** May 15.—**Schaus, W.** New species of Heterocera from tropical America, ii,* **6.**—**Sharpe, Emily M. B.** A Monograph of the Genus *Teracolus*, part ix. London. L. Reeve & Co., 1901. Rec'd. June, '01.—**Soule, C. G.** Notes on the mating of *Attacus cecropia* and others, **5,** July.—**Swainson, E. M.** Notes on lepidopterous larvæ from Jamaica, **6.**—**Tutt, J. W.** Migration and dispersal of insects: Lepidoptera (cont.), **21,** May 15 to July 1.—**Weeks, A. C.** An aberration of *Papilio philenor*, 1 pl., **6.**—**Wolley Dod, F. H.** Preliminary list of the Macro-lepidoptera of Alberta, N. W. T. (cont.), **4,** June.

HYMENOPTERA.—Cockerell, T. D. A. Descriptions of new bees collected by Mr. H. H. Smith in Brazil, ii, **1;** new and little-known bees from Nebraska,* **9,** July; variation in a bee, Nature, London, June 13, '01.—**Emery, C.** Notes on the Dorylinæ,* Bulletino, Societa Entomologica Italiano, xxxiii, 1, Florence, May 31, '01.—**Fox, W. J.** Two new Bembecine wasps,* **6.**—**Petrunkewitsch, A.** Parthenogenesis in the honey bee, **74.**—**Smith, J. B.** Notes on some digger bees, ii, 3 pls., **6.**—**Wheeler, W. M.** The compound and mixed nests of American ants, i,* figs., **3,** June; *Microdon* larvæ in *Pseudomyrma* nests, fig., **5,** July.

Monograph of the Sesiidæ of America, North of Mexico. By William Beutenmüller. Vol. I, pt. vi, Memoirs of the American Museum of Natural History, March, 1901. This great work treats of moths that are usually poorly represented in collections and difficult to determine as but few species were figured. Mr. Beutenmüller has given us an exhaustive and painstaking work, and one that must prove invaluable to all students of these natural objects. The typography of the work leaves noth-

ing to be desired; the text cuts are excellent and the figures of the moths themselves appear up to the standard. This is undoubtedly one of the best monographs ever writen in regard to American insects, and the only thing we can conscientiously criticise is the general character of plates xxxiv to xxxvi—they are exceedingly poor.—H. S.

Mosquitoes: how they live; how they carry disease; how they are classified; how they may be destroyed. By L. O. Howard, Ph.D., Department of Agriculture, Washington, D. C. New York, McClure, Phillips & Co. 12 mo. $1.50 net, postage 14 cents. This work of 240 pages and fifty illustrations covers the subject in an excellent manner. It is written in a popular way, yet scientific accuracy is never sacrificed. We particularly like the sub-headings of the chapters where the very natural questions concerning mosquitoes are answered. It is quite a relief to see a work like this after reading the entomological part of some of the papers on malaria in our prominent medical journals. This book should have a large sale as it is on a subject that is of interest to almost everyone. Physicians whose knowledge of entomology is usually very meagre would greatly profit by its perusal. It is the style of book one would expect from an accomplished entomologist, and Dr. Howard is to be congratulated on placing an interesting subject before the public in such a pleasing and scientifically accurate manner.—H. S.

NATURE BIOGRAPHIES:—"The Lives of Some Everyday Butterflies Moths, Grasshoppers and Flies." By Clarence Moores Weed. With 150 photographic illustrations by the author. Doubleday, Page & Co., New York. This work of 162 pages is gotten out in nice style, and many of the illustrations are excellent. The work is a popular one and can't fail to be useful. We particularly like the first chapter and its illustrations called "The Making of a Butterfly." We do not like the figures of drangonflies on the cover and see no use for such monstrosities. They would have been just as artistic and would just as well have reached a popular vein if they had looked more like dragonflies, and if the forked legs and forked tails had been drawn true to nature. There is plenty of room for improvement in the photographic part of the work. Some of the figures of the larva of the "viceroy butterfly" are poor. Fig. 43 and 44 show nothing and we take the author's word for it that there is something there. Fig. 58 is poor. We doubt that the people for whom the work is intended could see anything in Fig. 59. It is much easier to pin butterflies to plants and photograph them than to do the work under more difficult conditions, and we find that insect photographers often do this, but neglect to say so or infer that they were taken otherwise. Fig. 177 illustrates a dragonfly and shows an utter lack of detail. There is much chance for improvement in this respect. Fig. 136 is very poor, and also shows where improvement could be made. The book is written in a very happy vein and by one who knows his subject well. Photogra-

phy is going to popularize the study of insects as we long ago predicted. Dr. Weed has done wonderfully well and deserves great credit for being one of the first in the photographic field. We have pointed out some poor results in photography simply that advancement may be made. We are firm believers in the method and don't expect perfection at once. We can illustrate where this book will find its utility. A gentleman came into the Academy and picking it up, opened it at pages 120 and 121. One page, 120, is a figure of a *Luna* moth, and on 121 a figure of a dragonfly. He asked if the moth changed (transformed) into the dragonfly.—H. S.

THE INSECT BOOK.—We have received for review the kind of book we have hoped for and looked for these many years. It is also the book we shall recommend to the many students, teachers and young persons who so frequently come to us and ask, "What book can I get that will tell me what I wish to know about insects." No single work can cover such a vast field as that of Entomology, but the "Insect Book," by Dr. Howard, is the "open sesame" to further knowledge and lays the foundation and points out the way. The book is of the same size and general appearance as "Holland's Butterfly Book," and is a "Popular Account of the Bees, Wasps, Ants, Grasshoppers, Flies and other North American Insects, exclusive of the Butterflies, Moths and Beetles, with full Life Histories, Tables and Bibliographies." By Leland O. Howard, Ph. D., Chief of the Division of Entomology, U. S. Department of Agriculture. The publishers are Doubleday, Page & Co., 34 Union Square, New York. Sent postpaid to any address on approval. Price $3.00 net. The work contains 429 pages, including index and bibliography. There are 300 valuable text cuts, 16 full page plates in color and 32 in black and white. The plates as a whole are excellent, and demonstrate what the future holds in photographic methods. There is a lack of detail in some of the figures, and in some cases the colors are failures, especially in the metallic blues of the wings in the wasps which come out red. This is mentioned to call attention to the fact that the photographer, by careful study and use of the proper lenses, can do much better. We predict the day when any other method will be a thing of the past for any but very minute insects. Many of the figures are wonderfully beautiful, and we do not believe any artist, living or dead, could produce them as well. There is mechanical accuracy, exact reproduction of texture, faultless neuration and other good features. There are a few errors. The sexes of *Mutilla occidentalis* are incorrect, and the name of fig. 22, plate v, is wrong. The introduction is very thoughtful and suggestive, and the author says "if I had not thought it was needed I never should have written it." We can understand this feeling. Dr. Howard knows the importance of the study, and he takes this means of interesting people in it. The beginner is usually appalled by a dry scientific treatise, and the details that appeal to the devotee only discourage the person who at first only feels the poetry of nature, the

balmy air of Summer, the drone of the bee and the lazy sail of the graceful butterfly. A feature of the work is the full treatment of life-histories, so far as they are known. Attention is called to the lack of knowledge on this point in regard to so many species. Systematic work has advanced to such a position that there will be more time to devote to biological studies, and the great awakening of interest in Entomology will induce more persons to take up the neglected aspects of the study. We do not believe any one in America was so well qualified to undertake such a work as Dr. Howard, and we do not see how the work could have been better done, considering the time devoted to its preparation and the difficulty of selecting subjects for treatment. Few people, not entomologists, realize the vastness of the study and the number of kinds of insects.

We would like to go into detail in regard to the work, but space will not permit. The work is necessary in the library of every entomologist, and we can also say that we hope it may find its way into every home in America.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

ATTACHED to the bases of the under side of the tibiæ of the first pair of legs of *Platysamia cecropia* ♂ we find a peculiar organ or process. It seems to be attached by a small joint, and the process points upward and outward. It is over an eighth inch in length and wing-shaped, the inner side being curved and the outer straight. It is a secondary male sexual character. What is it named and what is its function?—HENRY SKINNER.

THE advantages for the study of insects afforded by the Biological Laboratory of the Brooklyn Instute of Arts and Sciences, at Cold Spring Harbor, Long Island.—The region of Cold Spring Harbor affords remarkable facilities for the study of insects, owing to the great variety of the plants to be found there, and to the topographical features of the landscape.

Large areas are covered with hard-wood forests, interspersed with isolated clusters of pine or other coniferous trees, and there are also wide open meadows in every state of preservation. Some covered with weeds and thistles, the favorite haunts of diurnal insects; while others are grassy or partially covered with young trees, affording excellent feeding grounds for larvæ.

The region of Cold Spring Harbor is especially remarkable, however, for its variety of hill and valley, and for the abundance of fresh water streams and ponds, as well as salt and brackish marsh land. Altogether a similar area containing greater varieties of envrionmental conditions could hardly be found. One may collect along the sandy, muddy or

rocky beaches, and in the course of a quarter of an hour thereafter, be in the midst of a landscape that, from its rich vegetation, suggests anything but the sea-shore.

The insect fauna of the region is interesting, as it contains many of those forms which extend southward from colder regions and northward from the warm Southern States.

The Biological Laboratory of the Brooklyn Institute of Arts and Sciences is situated on the shore of Cold Spring Harbor, and one of the chief objects of this Laboratory is to afford every possible facility for the study of land animals and plants. The opportunities for the study of insects will be especially good during the coming summer, for laboratory and lecture work upon the subject will be pursued, and every opportunity will be given for research work upon this group, the study of which has already lead to the founding of such corollaries of the theory of natural selection as those of mimicry, protective resemblance and warning coloration.—ALFRED G. MAYER.

Doings of Societies.

A meeting of the Feldman Collecting Social was held Wednesday evening, June 19, at the residence of Mr. H. W. Wenzel, 1523 S. 13th Street; 12 members present. Visitor, Mr. H. Viereck.

The Vice-President, Mr. Charles Boerner, in the chair. Professor Smith exhibited specimens of *Cysteodemus armatus*, collected in alcohol and pinned dry. Those that were collected in alcohol were black, like the specimens seen in most collections, while those pinned dry were covered with an orange bloom. In speaking of the little knowledge we have of the desert fauna, Professor Smith mentioned a new species of Noctuid which he had received from that region which was entirely different from anything known, and read the following extracts from a letter he had received from a collector in that district:

"From April 8th until June 1st I travelled with pack animals through one of the most difficult, and I may say dangerous, desert regions in the United States. Men perish there almost every year for want of water, as there are many places of from twenty to fifty miles between waters, and in many cases the water is uncertain or very bad when you do get to it.

"This being my first trip on this desert, my time has been taken up with hunting feed and water for the animals and camp use. On more than one occasion I dug for water in what we call tanks — that is a hole in the bed rock of a wash which retains water after rain. After working and shovelling for three or four hours I was fortunate to find water in most places, but sometimes only enough for the stock and three or four gallons to camp on over night, and a twenty-mile drive for water the next day.

"We (a party of three) were looking for placer gold principally. Between hunting for gold and water and travelling I was so worn out that I did not capture as many moths as I should have done.

"The Lepidoptera and many of the Coleoptera are only found on the deserts during certain seasons. I find some species are confined to a small territory, while others are more widely distributed. I also find different species on different elevations. On this trip I have been from an altitude of 264 ft. below to 8,000 ft. above sea level. My present camp is about 7,500 ft. above, and is too cold for night flying moths here, as we have a little frost every night. Moths are only attracted to light here during the dark of the moon, as we have no cloudy nights."

Professor Smith had sent some alcoholic specimens of mosquitoes to Mr. Johnson, who had determined them as *Ædes fuscus*, but later sending dry specimens to Mr. Johnson, he stated that they were probably a new species, which Mr. Henshaw corroborated. The maturing of these mosquitoes depends very much upon the location of the plants; those in the shade taking longer than those in the sun, and the larval life seem to last from October to June, which is longer than in other species. Professor Smith thought that the species which breed in the pitcher plants and is only found there does not bite and has but one brood.

Mr. Laurent exhibited a series of the eggs of *Mantis religiosa* and *Tenodera sinensis*, which showed a variety of shapes.

Mr. Daecke spoke upon and exibited a *Mantis* which he was trying to raise.

Dr. Castle exhibited a box of Coleoptera which he had collected this Spring, among which was *Dysphaga tenuipes*, taken at Angora, Pa.,— a very rare species.

Mr. Daecke mentioned finding the larva of *Haploa lecontei* which he had taken upon leaf buds of wild cherry at Laurel Springs, N. J., April 22, 1901. The larva changed into the pupa state May 5th and emerged June 5th. The food plant of this insect was not known before. Mr. Daecke also showed a new insect net which he had designed. Mr. Seiss mentioned dissecting a specimen of the common brown bat, whose stomach was full of mosquitoes. Mr. Wenzel exhibited a box of *Lachnosterna* taken recently in New Jersey, about twenty species in all, some of which were very rare. Mr. Laurent spoke about the manner in which the broods of butterflies seem to overlap in Florida, and he thought there were more broods in the southern part than in the northern. Mr. Viereck reported finding *Plenoculus davisii* at North Woodbury, New Jersey, as a species new to New Jersey.

WM. R. REINICK, *Secretary*.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held May 23d. Mr. Philip Laurent, Director, presiding. Thirteen persons were present. Mr. Rehn exhibited specimens of Mexican Locustidæ belonging to the genus *Stilpnochlora*. Mr. Johnson exhibited a collection of European Diptera which he used for comparative study. Attention was drawn to the method of mounting on pith. Dr. Skinner exhibited egg masses of *Mantis religiosa* which had been received from Prof. Slingerland. He also showed two species of Coleoptera reared from a book in the library of the College of Physicians of Philadelphia. One species was *Sitodrepa panicea*, and the other not determined. Mr. Laurent made brief reference to his trip to Miami, Florida, and said he would have more to say about it when he had his material studied. He did not consider Miami a very good place to collect. Some rare species may be found, and,

perhaps, some that are new; but he did not recommend it as a good place for the entomologist. Between February 15th and and May 4th there was but one good rain. Water was a very scarce commodity. He took between three and four thousand specimens. Nine species of Sphingidæ were captured.

HENRY SKINNER, *Recorder.*

The seventeenth regular meeting of the Harris Club was held at 35 Court St., Boston, on the evening of May 17, 1901. Eighteen members were present.

Mr. R. W. Denton showed a simple device for rearing Lepidoptera. The larvæ are kept in an ordinary lantern globe, across the lower part of which is fastened a piece of cardboard, perforated to allow stems of food-plants to pass through into a vesssel of water below. The upper aperture is covered by a bit of netting.

Mr. W. D. Denton spoke of the advantages derived from dyeing butterfly nets green.

Mr. Morse mentioned finding Tineidæ breeding in great numbers in a box of dog biscuit. Mr. Bolster said that the "buffalo bug" had been found to infest flour barrels.

Several members joined in a discussion of methods of rearing the larvæ of dragonflies in aquaria.

Mr. Newcomb suggested the selection of a single genus for special consideration at each meeting. The plan was adopted, and the lepidopterous genus *Colias* chosen for the June program.

Mr. W. D. Denton displayed some insects in "transparent mounts." Mr. J. H. Rogers, Jr., showed some recent captures, and told of his discovery that young larvæ of the Gypsy moth can live for more than a week without food.

W. L. W. FIELD, *Secretary.*

OTTO LUGGER.

Otto Lugger, State Entomologist of Minnesota, who died May 21st, from pneumonia, after a very short illness, was one of the most widely known of the many Americans of German

birth who have obtained high scientific reputation in this country. He was born at Hagen, Westphalia, September 16, 1844. His father was a professor of chemistry in a Prussian university. Lugger was educated in Hagen, and in 1864 became a lieutenant of cavalry in the Prussian army. In 1865 he came with his parents to the United States and secured a position with the engineer corps of the army, and for two years was engaged in the survey of the Great Lakes. He had always been interested in entomology, and collected specimens while engaged in his engineering work. He became acquainted with the late C. V. Riley, who at that time was occupied in newspaper work in Chicago, and when, in 1868, Riley was appointed State Entomologist of Missouri, Lugger went with him as his assistant. During the years 1868 to 1875, when Riley established his great reputation as economic entomologist and published eight of the nine annual reports which brought him lasting fame, Lugger remained his quiet, unassuming, self-sacrificing and devoted helper. In 1875 he married Lina Krokmann and went to Baltimore, where he became the curator of the Maryland Academy of Sciences and naturalist of the city parks. In 1885 he was appointed assistant in the Division of Entomology of the U. S. Department of Agriculture, remaining in Washington until 1888, when he was appointed entomologist to the State Agricultural Experiment Station of Minnesota, publishing his first bulletin in this new office July 3, 1888.

His first entomological experience in the State of Minnesota was one of great interest and importance, and his vigorous and intelligent action in the face of a great emergency fixed his standing as a most useful officer firmly in the minds of the Minnesota farmers. An enormous swarm of the Rocky Mountain locust or western migratory grasshopper had settled down in Ottertail County. By Lugger's advice and energetic field work, backed as he was by a public spirited and intelligent Governor (Hon. W. R. Merriam, now director of the U. S. Census), who personally guaranteed the funds necessary for the campaign, the hordes of destructive insects were annihilated and great damage was averted.

From that time to the time of his death, nearly thirteen years, Lugger's work was most active; his publications were frequent, and he gained the profound respect of his constituents and of the scientific men of the country. His bibliography, covering about thirty titles of record, comprises almost exclusively articles on economic entomology, but he was by no means a one-sided naturalist. He was a good botanist and published several papers concerning plant diseases, notably his article on the black rust or summer rust (Bulletin 64, Univ. Minn. Agric. Exp. Station).

Some years ago he began the publication of a series of large papers, which, when brought together, would have formed an elaborate treatise on the entomology of Minnesota. The parts which had been published were an extensive paper on the parasites of man and domestic animals (Bull. 48, 1896, Minn. Agric. Exp. Sta., pp. 72–270, figs. 187, plates 16); the Orthoptera of Minnesota (Bull. 55, 1897, pp. 91–386, figs. 187); the Lepidoptera of Minnesota (Bull. 61, 1898, pp. 55–334, figs. 237, plates 24); the Coleoptera of Minnesota (Bull. 66, 1899, pp. 85–331, figs. 249, plates 6), and the Hemiptera of Minnesota (Bull. 69, 1900, pp. 1–259, figs. 200, plates 15). It is a great pity that Lugger did not live to complete this series, since the elaborate numbers were profusely illustrated, and were prepared with great care and written in a most interesting style. At the time of his death he was preparing the part on Diptera, in which he intended possibly to include the Neuropteroids. It is greatly to be hoped that his manuscript was sufficiently advanced to permit its publication.

Aside from his scientific ability, Lugger was a man of admirable qualities. His wide information, his agreeable personality and his keen sense of humor made him one of the most delightful companions I have ever known. Many of his stories and humorous sayings are current among entomologists all over the United States, and his loss will be felt for many years to come. He leaves a widow and two children—a daughter, Mrs. Linnea Clarke and a son, Humboldt Lugger, the latter now living in Kentucky.—L. O. HOWARD, in *Science*, N. S., Vol. XIII, No. 338.